

WHAT IS CLAIMED IS:

1. Apparatus for hierarchical software distribution allowing distribution of a software package comprising at least a first and second package to a plurality of target nodes, said apparatus comprising:

a distribution node for transmitting packages of software;

a first branch node in communication with said distribution node, said first branch node being arranged to receive said software package from said distribution node;

first and second target nodes, said first target node being in communication with said first branch node via a first network link, and said second target node being in communication with said first branch node via a second network link; said first package already being present on said second target node;

said first branch node being arranged to transmit said software package over said first network link, and said second package over only said second network link;

whereby both the first and second packages are distributed to both said first and second target nodes.

2. Apparatus according to Claim 1 wherein said software package is sent as a contiguous package over said first network link.

3. Apparatus according to Claim 1 wherein said first branch node is provided with information regarding which packages should be forwarded to which target nodes.

4. Apparatus according to Claim 1 wherein said first branch node is in communication with said first target node via a second branch node, said second branch node being in communication with said first branch node via said first network link, and said second

branch node being in communication with said first target node via a third network link;
said second branch node being further in communication with a third target node via a
fourth network link.

5 5. Apparatus according to Claim 4 wherein each of said branch nodes is provided with
information regarding target nodes to which each branch node is responsible for sending
said packages and which of said first and second packages are required by said nodes; and
wherein each branch node forwards the information to subsequent nodes along each
branch, editing said information for each branch to include only target nodes reached via
that branch.

10 6. Apparatus according to Claim 4 wherein each of said branch nodes is provided with
information regarding the target nodes which require each of said first and second
packages, and is further provided with information regarding which of said target nodes
said branch node is responsible for forwarding information to from said distribution node
and which immediate branches the branch node uses to reach each of said target nodes for
which it is responsible; whereby each branch node can ascertain which packages should
be forwarded along each immediate branch.

15 7. Apparatus according to Claim 1 wherein said first package comprises at least two sub-
packages and wherein installation of said two subpackages on each of said target nodes
must be performed in a specified order; wherein
20 installation of one of said sub-packages has already occurred on said first target
node; and wherein
25 both of said subpackages are distributed to said first target node and neither of the
sub-packages are sent to said second target node.

8. Apparatus for hierarchical software distribution allowing distribution of a software package comprising at least a first and second package to a plurality of target nodes, said apparatus comprising:

a distribution node for transmitting packages of software;

at least one branch node in communication with said distribution node; and

first and second target nodes, said first target node being in communication with said branch node via a first network link, and said second target node being in communication with said branch node via a second network link; said first package already being present on said second target node;

each branch node being arranged to receive each of said first and second packages from said distribution node independently;

said branch node being arranged to transmit said first package via said first and second network links to said first and second target nodes, and said second package via said second network link to said second target node; and

said target nodes being arranged to install each package once the package is received;

whereby the complete software package is installed on each of said first and second target nodes.

9. A method of distributing a software package to at least a first and second target node over at least one common network link, said software package comprising at least a first package and a second package, said first software package already being present on said second node, said method comprising the steps of

sending said software package over said common network link; thereafter sending only said second package to said second target node; and sending said software package to said first target node;

whereby both the first and second packages are distributed to both said first and second target nodes.

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